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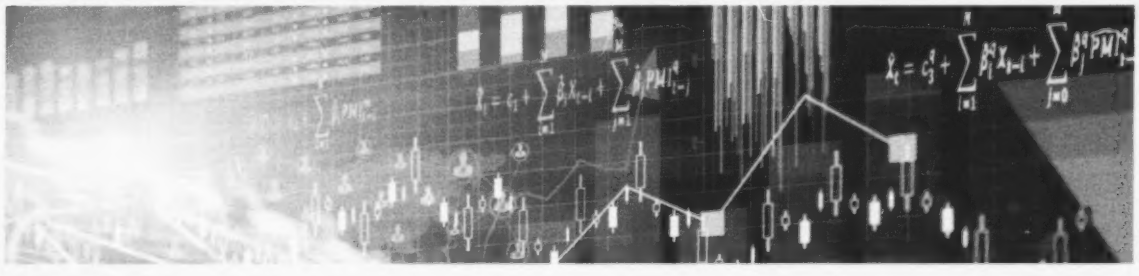
Responding to the First Era of Globalization: Canadian Trade Policy, 1870–1913



by Patrick Alexander and Ian Keay

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Responding to the First Era of Globalization: Canadian Trade Policy, 1870–1913

by

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Abstract

In this paper we document Canada's trade policy response to late-nineteenth- and early-twentieth-century globalization. We link newly digitized annual product-specific data on the value of Canadian imports and duties paid from 1870–1913 to establishment-specific production and location information drawn from the manuscripts of the 1871 industrial census. Our findings reveal a highly selective move towards protectionism following the adoption of the National Policy in 1879. Changes in the Canadian tariff schedule narrowly targeted final consumption goods that had close substitutes produced by relatively large, politically influential domestic manufacturers.

Bank topics: Trade integration; Economic models; International topics
JEL codes: F, F1, F13, F14, F42, F60, N, N71

Résumé

Dans cette étude, nous analysons la réaction de la politique commerciale du Canada à la phase de mondialisation économique de la fin du XIX^{e} et du début du XX^{e} siècle. Nous mettons en rapport des données annuelles récemment numérisées sur la valeur d'importations canadiennes et les droits de douane acquittés de 1870 à 1913 pour des produits particuliers avec de l'information propre aux fabricants concernant leur production et leur lieu d'implantation, laquelle provient des manuscrits du recensement des établissements industriels de 1871. Nos résultats font apparaître une montée hautement sélective du protectionnisme après l'adoption de la Politique nationale, en 1879. Les modifications apportées au tarif douanier canadien ciblent spécifiquement les biens de consommation finale pour lesquels il existait de proches substituts fabriqués par des entreprises nationales de taille plutôt importante qui usaient d'influence politique.

Sujets : Intégration des échanges; Modèles économiques; Questions internationales
Codes JEL : F, F1, F13, F14, F42, F60, N, N71

Non-Technical Summary

The period from 1870 to 1913 was a particularly volatile era for Canadian trade policy. This was a period of unprecedented growth in international trade flows (later known as the "first era of globalization"), providing both opportunities and challenges for any government forced to balance competing interests. Also, with Canadian Confederation in 1867 and a US Congress devoted to protectionism, the Canadian federal government had the challenging task of developing policies that would support the industrializing national economy.

Canada's trade policy from this era has traditionally been defined by a long-lasting shift towards protectionism under the National Policy in 1879. However, most of the evidence of this shift is based on limited information about aggregate average tariffs combined with historiographical accounts of political rhetoric from the era.

In this paper, we document Canada's tariff policy during this era using newly digitized annual product-specific data on the value of Canadian imports and duties paid from 1870–1913, linked to establishment-specific production and location information drawn from the manuscripts of the 1871 industrial census. From this dataset, we derive product-level measures of average weighted tariffs from 1870–1913, and we provide evidence of significant across-product dispersion in applied tariff rates on Canadian imports that increased noticeably after the institution of the protectionist National Policy in 1879.

Guided by theoretical predictions derived from trade policy models, we explore the role that products' import intensity, import substitutability, and producers' political influence had in explaining the selectivity we document in the government's post-1870 tariff changes.

We find evidence of a significant shift in 1879 towards protectionism that supported Canadian manufacturers over and above producers of unmanufactured products. Within the manufacturing sector, we find that larger tariff increases were imposed on products that had lower import intensity and higher import substitutability *if* they were produced by domestic firms with potential political influence. In other words, conditional on the presence of political influence, domestic production levels and the substitutability between imports and domestically produced goods played an important role in determining the changing structure of the Canadian tariff schedule after 1879. Holding all else constant, we find that potential political influence was associated with an increase in the average product's tariff rate of 3.6 percentage points, out of an average 7.2 percentage-point rise in 1879. We find no significant evidence that tariff revisions either before or after the National Policy fit this pattern.

Altogether, our findings largely support traditional descriptions of the National Policy as a significant shift towards protectionism in support of politically influential Canadian manufacturers.

1 Introduction

Antoni Estevadeordal, Brian Frantz, and Alan Taylor (2003: 359) describe the period from 1870 to 1913, during which transoceanic and overland transport costs were falling sharply; capital and labour flows were rising; and international trade, particularly trade in industrial products and raw materials used in industrial production, was expanding rapidly, as the "first era of globalization."[1] In the United States during this period, a deeply divided, Republican-controlled Congress tripled average tariff rates – from 15% in 1859 to 45% in 1870. After 1870 some US tariffs were very slowly rolled back, although on average they remained at or slightly above 30% for the next two decades (Taussig 1931, Irwin 2010: Table A1). During the late nineteenth and early twentieth centuries Canada was a small, resource-rich, rapidly industrializing economy, that was deeply dependent on international markets. Falling transport costs, increasing competition from industrial imports, and a southern trade partner with a new-found devotion to protectionism posed serious challenges to Canada's industrial and economic well-being.[2]

John A. Macdonald's Conservative Party campaigned in the 1878 national election on a platform that promised a new "National Policy" for Canada, which included support for European immigration into the western prairie provinces, subsidization of a trans-continental railway to be built entirely within Canadian territory, and the adoption of explicitly protectionist trade policy objectives intended to shield domestic infant industries from the effects of US protectionism and international market pressure. The Conservatives won the election, and in their first budget, brought before Parliament on March 14, 1879, a new tariff act was introduced which rewrote virtually every line in the Canadian tariff schedule. The National Policy raised overall average tariff rates from just less than 14% in 1877 (the last full fiscal year before the policy) to 21% in 1880 (the first full fiscal year after the policy). Tariff rates were increased again in 1884 and 1887, and although average tariffs did fall during the 1890s and early 1900s, as Canada entered the first World War in 1914, the aggregate average weighted tariff rate (AWT) was still 18%. Protectionism remained an explicit objective for Canadian trade policy from 1879 until the signing of the free trade agreement with the United States in 1988 (Gillespie 1991).

[1] On transport costs see Harley 1989, Inwood and Keay 2015, Isserlis 1938, Mohammed and Williamson 2004, North 1958, and Jacks and Pendakur 2010. On factor flows see O'Rourke and Williamson 1999, Taylor and Williamson 1997, and Jones and Obstfeld 1997. On trade expansion see Betrán and Huberman 2016, Huberman, Meissner and Oosterlinck 2017, and O'Rourke and Williamson 1999. On global trade policy responses see Tena-Junguito, Lampe and Tamega-Fernandes 2012, and Lampe and Sharp 2013.

[2] The gross value of Canadian trade consistently exceeded 40% of domestic GDP between 1870 and 1913 (Urquhart 1993, Alexander and Keay 2018).

At high levels of aggregation, Canada's trade policy response to the first era of globalization has been well documented. However, tariff rates averaged over all imports, or broad sector and industry sub-sets of imports, tell us little about the structure and selectivity of the policy response. In general, an absence of annual, granular evidence on trade flows during the late-nineteenth- and early-twentieth-century globalization episode limits our ability to identify and analyze inter- and intra-industry variation in countries' policies. In this paper we use newly digitized data on import values and duties paid for individual traded articles, drawn from the Canadian Sessional Papers' *Trade and Navigation Tables* for every year between 1870 and 1913, to document changes in the structure of protection adopted by one of the most active small open economies trading on international industrial and raw material markets during the post-1870 era.[3] We aggregate values for individual articles up to commonly defined six-digit Harmonized Commodity Description and Coding System (HS6) products, we distinguish non-traded products, raw materials, exotics, and unprocessed foodstuffs from manufactured products, and after linking the evidence on traded goods to the output and input products, and production locations enumerated in the digitized manuscripts of the 1871 *Canadian Census of Industrial Establishments*, we also distinguish between manufactured final consumption (output) goods and manufactured intermediate inputs.

With all products identified and categorized, we calculate AWT and effective rates of protection (ERP) for each of the 28,688 unique product-year observations included in the trade tables over the 1870–1913 period. The disaggregate annual trade data allow us to describe the evolution of a small open economy's late-nineteenth- and early-twentieth-century policy response in a way that is much more complete and finely detailed than the broader, more aggregate perspectives that dominate most of the historical trade narratives that focus on this era. For the first time in a Canadian context, we identify inter- and intra-industry variation in the application of protective tariffs, with particular focus on the initial move towards explicitly protectionist policy objectives in 1879.

Beyond the established fact that average tariff levels rose following the adoption of protectionism, from 13.6% to just less than 21%, we find that tariff increases also became highly selective – narrowly targeting particular industries, products, and producers. With the introduction of the National Policy, the effective rate of protection on output products relative to intermediate inputs increased by 12 percentage points, from 24% to 36%; manufactured products saw much larger increases in their rates of protection than unprocessed foodstuffs, raw materi-

[3]Our work builds on the detailed analysis of Canadian trade policy provided by Beaulieu and Cherniwchan (2014), which uses granular trade data from five-year intervals over 1870–1910. The authors thank Beaulieu and Cherniwchan for generously providing their data and offering invaluable support for this project.

als, or exotics; the share of products required to pay an import duty (tariff coverage) increased by 9 percentage points; and the variation in tariff increases across products, as measured by the relative mean absolute deviation (MAD), increased by nearly 17 percentage points.[4] Across two-digit standard industrial classification (SIC2) industries, some manufacturers experienced very pronounced increases in their protective tariffs – Transport Equipment, Petroleum and Coal Products, Iron and Steel Products, and Paper, for example – while others, such as Wood Products, Printing and Publishing, and Food and Beverages, saw little or no change.

Motivated by theoretical endogenous trade policy models, we explore the role that products' import penetration ratios and import demand elasticities, and producers' political influence, had in explaining the selectivity we document in the government's post-1870 tariff changes. With theory-consistent empirical specifications derived from Grossman and Helpman's (1994) "protection-for-sale" model, we show that Canadian tariff revisions under the National Policy closely match the model's predictions (Goldberg and Maggi 1999, Gawande and Bandyopadhyay 2000, Gawande and Krishna 2008). Specifically, larger tariff increases were imposed on products that had lower import penetration ratios and higher import demand elasticities *if* they were produced by domestic firms with potential political influence. In other words, conditional on the presence of political influence, domestic production levels and the degree of substitutability between imports and domestically produced goods played an important role in determining the changing structure of the Canadian tariff schedule after 1879. Our annual estimates of one of the protection-for-sale model's key structural parameters reveals that the weight the Canadian government placed on political influence in their objective function, as opposed to social welfare, peaks in 1879 and 1880. Holding all else constant, we find that potential political influence was associated with an increase in the average product's tariff rate of 3.6 percentage points, out of an average 7.2 percentage-point rise in 1879. We find no significant evidence that tariff revisions either before or after the National Policy satisfied the predictions of the protection-for-sale model.

The Canadian response to US protectionism and the globalization of international markets after 1870 was to adopt explicitly protectionist policy objectives under the National Policy. The key features of this policy shift include both a substantial increase in average rates of protection, and an increase in the selectivity of tariff schedule. Our findings suggest that domestic industries with low levels of import penetration, close foreign substitutes, and the ability to

[4] In Alexander and Keay (2018) we describe our detailed investigation of the welfare consequences of Canada's adoption of trade protection. We find that although a static, partial equilibrium approach to the measurement of deadweight loss as a result of the adoption of protectionism reveals a decline in social welfare of approximately 0.5% of gross domestic product (GDP), a general equilibrium approach reveals potential welfare gains equal to as much as 0.2% of GDP.

apply political pressure had a significant impact on exactly which products were protected, and how much protection those products received. The absence of uniformity in the National Policy tariffs points to a complexity and sophistication in the adoption of protectionism that can only be documented with annual, finely disaggregated, product-specific trade data.

The rest of the paper proceeds as follows: in Section 2 we provide a brief review of the historiography on Canadian trade policy during the 1870–1913 period. We document patterns across and within industries and product categories in Canadian AWT and ERP in Section 3. These patterns reveal particularly pronounced product-specific selectivity in the country's tariff changes following the adoption of protectionism under the 1879 National Policy. In Section 4 empirical specifications based on the Grossman and Helpman's protection-for-sale model are used to explain the selectivity in Canadian tariff changes that we document. Section 5 includes a summary of our results and our main conclusions.

2 The Literature on Historical Trade Policy in Canada

Much has been written about Canada's policy response to US tariff increases and the powerful globalization forces at work after 1870, and a wide range of possible connections between Canadian tariff rates and domestic economic and industrial development have been studied. For many years commentators and economic historians viewed the adoption of protectionism under the National Policy as a potentially costly but necessary policy choice. Tariff increases were thought to have provided domestic manufacturers with the opportunity to extract economic rents from consumers who faced higher prices, while simultaneously supporting import substitution, increases in the scale of domestic production, and investment incentives for producers who were struggling against rising imports and closing international (particularly US) markets (McDiarmid 1946, Fowke 1952, Easterbrook and Aitken 1956, Goodrich 1970). Starting in the late 1960s, a revisionist literature downplayed the National Policy's support for infant industries, focusing instead on the static welfare losses that are predicted in neo-classical, Ricardian trade environments (Dales 1966, Easton, Gibson and Reed 1988). According to this view, the National Policy tariffs reduced competitive pressures in the Canadian economy, which allowed manufacturers to charge prices in excess of their marginal costs, and reduced social welfare. Estimates of the size of the static, partial equilibrium deadweight losses resulting from the move to protectionism in 1879 vary from approximately 4% of Canadian GDP, to 0.5% (Pomfret 1993, Beaulieu and Cherniwchan 2014, Alexander and Keay 2018).

A more theoretically motivated branch of the historical literature on Canadian trade policy has adopted a dynamic perspective, relying on insights from "new trade" models which allow

for deviations from Ricardian trade theory's perfect competition, market clearing, no externalities, and constant returns to scale assumptions (Inwood and Keay 2013, Harris, Keay and Lewis 2015).[5] In these models, tariffs promote dynamic productivity responses as domestic mark-ups are cut, internal scale economies are exploited, and learning-by-doing accelerates. Tariff increases, therefore, are portrayed in a more favourable light because they are thought to have allowed domestic output to grow more rapidly, which facilitated a movement down producers' long-run average cost curves and up their learning curves, such that productivity improved and, eventually, output prices declined.

All of the more traditional studies of the adoption of protectionism in Canada in 1879 were founded on empirical evidence that is, in some important respects, incomplete. The traditional, revisionist and new trade literature is largely supported by anecdotal evidence, or broad industry and sector aggregates that often have significant time series and cross sectional gaps (McDiarmid 1946, Fowke 1952, Easterbrook and Aitken 1956, Barnett 1966, Dales 1966, Easton, Gibson and Reed 1988). Some of the most recent work uses more granular tariff measures from five- or ten-year intervals, slightly more disaggregate industry-level evidence, or detailed but narrow industry case studies (Inwood and Keay 2013, Harris, Keay and Lewis 2015). Unfortunately, although the aggregate evidence used in much of this literature has allowed us to document broad movements in aggregate tariff rates, it reveals no detailed information about the structure, timing, and selectivity of the Canadian trade policy response.

Eugene Beaulieu and Jevan Cherniwchan (2014) have provided us with the first granular, product-specific information on Canadian import values and duties, collected for five-year intervals spanning the 1870–1910 period. Because their finely disaggregated data reveal a much more complex policy transition than was apparent from any of the earlier aggregate evidence, our view of the National Policy and its impact on the Canadian economy has begun to shift. Beaulieu and Cherniwchan show that average Canadian tariff rates not only increased between 1875–1880, but there were also significant increases between 1880–1885 and 1885–1890; they report that revenue-generating tariffs on "exotics" – products with low levels of domestic production and low import demand elasticities – were exceptionally high throughout this period; and using disaggregate but modern import demand elasticity estimates, they derive trade restrictiveness indexes (TRI) which reveal that Canadian trade policy targeted specific import goods on the basis of their substitutability with domestic production, particularly during the late 1880s and early 1890s. Beaulieu and Cherniwchan (2014: 148) emphasize that their use of "...customs data reported at the product level...allows us to account for detailed changes in

[5]For examples of new trade models that have been applied in the work on Canadian trade policy, see Harris 1984, Horstmann and Markusen 1986, and Melitz and Trefler 2012.

the tariff schedule, (which reveal that) aggregated data understate the impact of changes in tariff structure." In other words, product-specific trade data are required if we want to document all aspects of the Canadian trade policy response to globalization, import competition, and US protectionism that appears to have been complex, sophisticated, and highly selective.

The evidence used in this paper extends Beaulieu and Cherniwchan's (2014) work in two important respects. First, we fill in the gaps between their five-year intervals by providing annual product-specific information on Canadian import values and duties paid. The complete time series provides year-by-year information that allows us to pinpoint the effects of specific policy revisions, such as the introduction of the National Policy in March 1879. Second, we link the trade data to establishment-specific production, intermediate input, and location information drawn from the manuscripts of the 1871 *Canadian Census of Industrial Establishments*. The linked data allow us to examine the extent to which tariff changes during this period differentially protected incumbent Canadian industries, products, or locations.

3 Changes in the Structure of the Canadian Tariff Schedule

In every fiscal year since the formation of the Canadian dominion in 1867, the minister responsible for international trade has been required to publish a detailed, quantitative description of the flow of goods in and out of the country in the Parliamentary Sessional Papers. During the late nineteenth and early twentieth centuries, these *Tables of Trade and Navigation for the Dominion of Canada* were remarkably extensive in the breadth and depth of their coverage. Finely detailed information by article, origin, destination, port of entry, and customs office is provided for warehousing, trans-shipment, shipping, exports, and imports. For all imported articles this information includes units of weight or volume, quantities, value of total imports, value of imports for home consumption, and duty paid, often categorized by source country, tariff class, or legislative act. We have digitized and assembled the fully disaggregated, annual import and export data from these tables for the years 1867–1913.

The level of detail in these tables can be daunting. For example, in the 1901 Sessional Papers, covering the fiscal year ending June 30, 1900, the itemized trade table fills 610 pages and lists 1,402 traded articles.[6] Because the same product may be included in the tables as multiple distinct articles depending on the size or type of packaging, or some other feature of the article that does not alter its fundamental character – such as wine imported by the bottle

[6]Until 1906, fiscal years end June 30, after which they end March 31. We code the fiscal year ending June 30 as the preceding calendar year, so for example, the 1901 Sessional Papers include trade data for the fiscal year ending June 30, 1900, which we code as 1899. The data for 1906 covers only nine months, from July 1, 1906 to March 31, 1907.

or cask, or the gauge of copper wire – and because identical articles are regularly described in slightly different ways from one year to the next, we follow Beaulieu and Cherniwchan by matching every article to a modern HS6 product description. We then link every six-digit product code to a unique two-digit industry, based on the descriptions provided in the Dominion Bureau of Statistics' 1948 *Standard Industrial Classification Manual*. Manufactured products are grouped into 16 SIC2 manufacturing industries, while unmanufactured products are categorized as raw materials; unprocessed foodstuffs; or exotics.[7]

3.1 Average Weighted Tariffs

Dividing the "Amount of Duty Paid" by the "Value of Imports for Home Consumption" for each article listed in the tables in each year provides us with nearly 29,000 article-year tariff rates. We aggregate the article-specific rates up to commonly identified product (HS6) and industry (SIC2) rates using import value weights.[8] Figure 1 depicts the AWT for all import products; all manufactured products; intermediate inputs; and raw materials, for every year between 1870 and 1913. We note that the series shown in Figure 1 are not mutually exclusive – many of the intermediate inputs, for example, may be classified as either manufactured products or raw materials.

Insert Figure 1

Although there were continuous updates and minor tweaks to the Canadian tariff schedule in every year between 1870 and 1913, there were only six major revisions of the full schedule during the first era of globalization (Beaulieu and Cherniwchan 2014, Gillespie 1991, McDiarmid 1946). All six of these changes can be clearly seen in the AWT series depicted in Figure 1. The first of these revisions was the Mackenzie tariff of 1874, which increased rates by a relatively small amount – only +2.5% for manufactured products and just over +1.5% for unmanufactured products – across a wide range of products. Prime Minister Alexander Mackenzie's

[7]Exotics include two-digit HS (HS2) codes: 09 (coffee, tea and spices); 18 (cocoa); 22 (spirits and vinegar); and 24 (tobacco products) (Lehmann and O'Rourke 2011). The aggregation of the HS6 products up to the SIC2 level allows us to match the trade data to industry definitions used by Urquhart (1993), Barnett (1966), and Inwood (1995). Among the SIC2 industries, no Rubber Products are listed in the tables until 1874, and no Electrical Apparatus products are listed until 1880. Urquhart only reports Electrical Apparatus output after 1890. Because no import unit values or output prices exist for Electrical Apparatus, the industry is dropped, leaving us with 16 SIC2 manufacturing industries.

[8]We recognize that in addition to under-weighting prohibitive tariffs, and over-weighting revenue generating tariffs on exotics, import value weights may also overestimate average tariff increases, and underestimate average tariff reductions when there is a lag in the adjustment of trade volumes to changes in tariff rates (Lampe and Sharp 2013: 215-216). However, unweighted tariff rates are unsatisfactory because of their overemphasis on lightly traded products, and we have no information on product-specific gross output or value added.

stated objective for this policy was increased revenue generation, and there is little evidence of differential tariff adjustments across products or industries. In fact, tariff dispersion across all products actually falls slightly in 1874. The tariff act introduced by Charles Tupper in 1887 brought in larger and more differentiated tariff increases, the most obvious of which can be seen in Figure 1 as a sharp spike in raw materials' AWT that is the result of the temporary removal of the colonial preference provided to British raw sugar producers.[9] There were modest, but still fairly narrowly targeted downward adjustments in average tariff rates associated with the schedule revision in 1894 (Keay 2018), and both the Fielding tariff in 1897 and the tariff act of 1907 reintroduced preferential tariffs for imported products originating within the British Empire, which again slightly lowered overall average rates. On the eve of World War 1 in 1913, the Canadian AWT for all import products was nearly 4 percentage points higher than it had been in 1870, with unmanufactured goods' AWT falling over the period, from 15% in 1870 to 7% in 1913, and manufactured output products' AWT rising from 14% to 20%.

The contrast between the tariff changes introduced under the National Policy and the revisions that came before and after 1879 is stark. John A. Macdonald's Conservative government established a budget subcommittee shortly after winning the 1878 federal election to hear petitions from stakeholders seeking protection from foreign competition. Government supporters proclaimed the change in the tariff schedule that resulted from this process to be a bold move away from the country's traditional revenue objectives, towards explicitly protectionist goals. Most of the literature on Canadian historical trade policy considers the increase in the overall average tariff rate that spans the 1878 and 1879 fiscal years – averaged over all import products, tariffs rose from 13.6% in the year ending June 30, 1878 to 20.9% in the year ending June 30, 1880 – to be the defining characteristic of this move to protectionism. However, as Beaulieu and Cherniwchan (2014: 158) point out, the increase in the overall average AWT does not necessarily reflect the extent to which the policy marked a discontinuous break from revenue generation, in favour of trade protection. Moving from aggregate averages to granular, annual evidence allows us to document changes in the structure of the Canadian tariff schedule across specific industries, products, and product-types. We find that the overall average change in AWT in 1879 was, in fact, far from uniform, and it is the lack of uniformity that reveals a much more complete picture of the protectionist nature of Canadian policy during this era.

Insert Table 1

The industry, product-type, and sector AWT reported in Table 1 (and Figure 1) provide a first glimpse of the targeting embodied in the National Policy's tariff revisions. It is immedi-

[9] Preferential tariffs for British raw sugar imports were reintroduced in 1890.

ately clear that the increases associated with the move to protectionism were not identical for all industries or product categories. Tariffs on raw materials, for example, rose from 5.6% to 9.5% in 1879 and, although tariffs on exotics were considerably higher than all other products throughout our period of study, there was virtually no change in exotics' AWT in 1879 – their average rates increased by just 0.7 percentage points to 38.9%. Average tariff rates on manufactured products, on the other hand, rose sharply under the National Policy – from 14.2% in 1877 to 21.3% in 1880 – and as a result, the differential between manufactured products' AWT and raw materials' AWT increased by 2.6 percentage points, while the gap between manufactured products' AWT and exotics' AWT fell by more than 6.4 percentage points. Even within the manufacturing sector, tariff increases varied widely across industries – Tobacco, Textiles, Clothing, and Rubber saw very small increases in 1879, while the average tariff imposed on products produced by Printing and Publishing, Non-Ferrous Metals, Transport Equipment, and Petroleum and Coal more than doubled.

As these figures suggest, the move towards protectionism was unquestionably associated with a sharp increase in the overall average tariff rate. However, this evidence provides us with a very limited view of the government's post-1870 policy response to international market pressures. With product-specific annual evidence, we can provide another, more finely detailed perspective on the changes that were introduced under the National Policy. More specifically, we find that not only did average levels rise, but the inter- *and* intra-industry structure of the tariff schedule was transformed – more products were required to pay a duty, and the dispersion in tariff changes across individual products increased abruptly. In other words, our granular data allow us to document the extent to which overall average tariff rates were pushed upwards by increasingly diverse changes along both the intensive and extensive margins of protection.

Insert Table 2

In Table 2: Panel A and B, respectively, we report tariff coverage ratios – the share of products that are required to pay a duty upon entry – and a measure of the dispersion in tariff changes – the mean absolute deviation – for all import products; all unmanufactured goods; all manufactured goods; and all manufactured goods grouped by SIC2 industry. Between 1870 and 1880, protection along the extensive margin – tariff coverage – increased from 61% to over 75%, and in 1879 alone coverage increased by 9 percentage points. However, again, this expansion in the number of products covered by the tariff schedule was not uniform. Unmanufactured products, particularly exotics, and some manufacturing industries, including Food and Beverages, and Chemicals, saw no change or even small reductions in coverage, while other manufacturing industries – Iron and Steel, Transport Equipment, and Clothing – saw tremen-

dous growth in the share of their import products subject to duties. When we compare the impact that the increase in coverage had on average tariff rates to the impact of changes in AWT on products that were already being taxed before 1877 – the intensive margin – a simple back-of-the-envelope calculation reveals that approximately one-third of the total increase in manufactured products' AWT in 1879 (specifically, 35.2% or 2.5 percentage points) can be attributed to the application of tariffs on new products. The remaining two-thirds was the result of the increase in the rates on products that were already paying some duty.[10] Clearly, the tariff schedule was being restructured along both margins – the National Policy imposed new tariffs on many products that had previously entered as free goods, and tariffs were being raised on imports that were already paying some tax upon entry.

The other dimension of the Canadian trade policy response that is revealed in Table 2, and that can be documented only with annual, granular evidence, is the change in the cross-product distribution of the AWT depicted in Figure 1 and Table 1. The MAD in the change in AWT measures the dispersion in tariff changes across products in each year.[11] An increase in the MAD reflects a move away from uniformity, and therefore, a change in the structure of the tariff schedule. Across all products, the MADs during the decades immediately before and after the introduction of the National Policy (1870–1877 and 1880–1889) averaged less than half the mean absolute deviation in 1879 – 0.017 relative to 0.050. The Clothing, Printing and Publishing, Transport Equipment, and Non-Ferrous Metal industries all saw particularly large increases in dispersion, while the MAD in the changes in Petroleum and Coal Products' AWT actually fell very slightly in 1879. Across all manufactured products, the MAD increased by just over four percentage points in 1879 – more than four times the increase in dispersion measured for any of the other five major revisions of the Canadian tariff schedule between 1870 and 1913. The coverage ratios and MAD figures reported in Table 2 suggest that the National Policy was not simply a uniform increase in pre-existing tariff rates. New products were being protected, and tariff changes varied widely across and within industries.

3.2 Effective Rates of Protection

Another approach to the assessment of the newly protective nature of the National Policy's restructuring of the tariff schedule requires us to look more carefully at differential tariff

[10] In 1877 tariff coverage was 73% and the AWT on covered products was 19.3%. In 1880 coverage was increased to 83% and the AWT on covered products was 25.6%. If coverage had not changed in 1879, the AWT on manufactured products in 1880 would have been 18.7% rather than the observed 21.3%.

[11] Other dispersion measures that can include zero values, such as Gini coefficients, standard deviation, coefficients of variation, and relative mean absolute deviations, all produce qualitatively similar results in terms of the increase in dispersion in 1879.

changes across import goods destined for final consumption, relative to goods used as intermediate inputs by domestic producers. We measure annual product-specific ERP to show that selective tariff increases were not just generally targeting all manufactured products, or all products within specific industries, but tariff changes were carefully distinguishing between intermediate input and output products.

In his classic 1966 article, Warner Corden describes how the protection provided by a change in the structure of a country's tariff schedule can vary widely depending on how the tariff changes affect both imported substitutes for domestic final consumption goods relative to imported intermediate inputs. His approach simply recognizes that the effective protection afforded any domestic producer by a country's tariff schedule is reflected in domestic firms' value added, rather than their gross revenue. Corden's (1966: 222) original ERP specification requires information on producers' intermediate input cost shares and product-specific tariff rates for both output products and intermediate inputs.[12]

$$ERP_j = \frac{\tau_j^{out} - s_j^{in}\tau_j^{in}}{1 - s_j^{in}} \tag{1}$$

where: time subscripts are suppressed; j = SIC2 industries; τ^{out} = average weighted tariff for output products identified at the HS6 level of aggregation; τ^{in} = average weighted tariff for intermediate input products identified at the four-digit HS (HS4) level of aggregation; s^{in} = intermediate input cost share.[13] The main complication in measuring effective rates of protection for Canadian producers during the late nineteenth and early twentieth centuries stems from the need to determine the extent to which products included in the trade tables were used as intermediate inputs by Canadian establishments.

We do not have annual product-specific information on the intermediates used by Canadian manufacturers during our period of study. However, we do have complete count micro-data from the manuscripts of the 1871 *Canadian Census of Industrial Establishments*. Enumerators for this census were asked to note the primary intermediate inputs used by every industrial establishment operating in Canada, as well as the units of weight or volume, quantities, and the

[12]Corden (1975) introduces an alternate specification that emphasizes the tariff schedule's impact on value added in the presence of protection relative to counterfactual value added that could be generated in a free trade environment: $ERP = (VA_\tau - VA_{ft})/VA_{ft}$. Because we do not have industry-specific data that would allow us to derive domestic value added at international prices, we rely on Corden's original (1966) specification. Sensitivity tests suggest that our qualitative conclusions do not depend on the ERP specification used.

[13]If we assume perfect competition and/or that capital owners capture all returns to market power, then intermediate input cost shares are a good proxy for input elasticities. Because we cannot derive elasticities or cost shares for specific products, we use SIC2 industry costs shares derived from Urquhart (1993). Sensitivity tests using cost shares disaggregated into separate shares for Fuel, Miscellaneous Expenses, and Materials suggest that our qualitative conclusions do not depend on the input aggregation scheme used.

value of these inputs. Over 43,000 establishments were enumerated. 2,178 unique intermediate inputs were recorded in 5,397 unique combinations. Because of the limited detail provided by enumerators, we are able to match the reported inputs to Harmonized Commodity Description and Coding System codes only at the HS4 product-level. For each manufacturing industry, we use the HS4 input products that were enumerated in at least 20% of its establishments in the 1871 census to identify industry-specific intermediate inputs, and calculate τ_j^{in}, for each year from 1870–1913. The products used to calculate industries' intermediate input AWT are reported in the online appendix Table A1, along with the frequency with which these products were enumerated as inputs in the 1871 census manuscripts. The main concern with this approach is the possibility that changes in location, technology, industrial structure, or even consumer demand could result in changes in the inputs used by each industry during the years after 1871. This problem is unlikely to be severe in our context because the inputs are identified at the fairly aggregate four-digit level. As a result, the inputs' fundamental characteristics are quite broadly defined – "wood in the rough" or "cotton yarn" are two important examples – which means we can be fairly confident that input categorization should have been stable and consistent between 1870 and 1913.

Insert Table 3

From Table 3 (and Figure 1) we can see that our effective rates of protection reveal another perspective on the increase in the selectivity of the Canadian tariff schedule following the introduction of the National Policy in 1879. Tariffs imposed on the intermediate inputs used by Canadian manufacturers increased from 6.3% to 10.7% in 1879, but this increase is much smaller than the increase in manufactured output products' tariff rates, which rose from 14% to nearly 22%. The effective rate of protection for Canadian manufacturers increased by 14.2 percentage points in 1879 alone, from 26.4% to 40.6%, and the aggregate ERP stayed consistently high through the rest of our period of study, averaging more than 35% during the 1880s, 1890s, and early 1900s.

Although the cross-section and chronological patterns in the ERP and AWT are broadly similar, in Figure 1 we can see that over the full period, and particularly in 1879, net tariff protection (ERP) rises much more sharply than gross protection (AWT). The granular data allows us to be even more specific about inter-industry differences in the targeting of final consumption goods. In particular, not all industries had highly correlated AWT and ERP patterns over our period of study – miscellaneous products, for example, enjoyed an AWT increase on their output products of more than 10 percentage points in 1879, but this was matched almost exactly by an increase in the tariffs on their intermediate inputs, such that their effective rate of protection

rose by less than one percentage point. Rubber, and Leather Products, on the other hand, saw their effective rates of protection rise substantially more than the AWT on their output products alone, with the differential between effective and gross protection increasing by more than seven percentage points for both industries in 1879. More generally, Transport Equipment, Printing and Publishing, Petroleum and Coal, and Non-Ferrous Metals all enjoyed the most substantial increases in effective protection, while Textiles, Food and Beverages, and Tobacco products experienced only small increases. We also note that for some industries, intra-industry dispersion in effective protection increased sharply in 1879, with Tobacco, Clothing, and Textiles having the highest coefficients of variation. In general, the effective rates of protection clearly illustrate another dimension of the inter- and intra-industry targeting of Canadian tariff changes in 1879 – most, but not all industries' output products were strongly differentially protected relative to their imported intermediate inputs.

Insert Table 4

In Table 4 we present evidence from our linked trade data for all manufactured import products that characterizes the changes in Canadian trade policy that occurred through the post-1870 era of globalization, with a particular focus on the targeting of changes imposed under the National Policy in 1879. The AWT on manufactured products rose by more than half, from 13% to 22%, over the 1878 and 1879 fiscal years; along the extensive margin, the share of manufactured imports subject to duty rose from 72% to 81%; along the intensive margin, the share of manufactured imports that experienced an increase in their AWT jumped by 34 percentage points to 89.3%; and the cross-product dispersion in tariff changes (MAD scaled by the average tariff level) increased from 0.087 to 0.254. Concentrating more narrowly on the targeting of particular product-types, we see that the differential between manufactured products' AWT and raw materials' AWT increased by 2.6 percentage points, while the differential between manufactured products' AWT and exotics' AWT narrowed by 6.4 percentage points, and the effective rate of protection for manufactured products rose from 22% to just over 36%. Based on these sector-wide averages, the National Policy appears to mark a significant break in the structure of the Canadian tariff schedule – average tariffs increased along the intensive and extensive margins, the targeting of manufactured output products increased, and the dispersion in tariff rates rose sharply. This evidence, particularly the summary statistics that reveal a move towards selectivity, naturally raises the question of why some industries, products, and product-types received more protection than others under the National Policy.

4 Explaining Changes in the Tariff Structure: Protection-for-Sale

The evidence presented in Section 3 documents how the National Policy's move towards protectionism was not uniformly distributed across (or within) industries and product categories. Why were some industries and products targeted by the National Policy, while others were not? What role did political influence, domestic competition, or the presence of domestic substitutes play? Was trade protection "for sale" in Canada in the late nineteenth and early twentieth century, and what might this tell us about the objectives of Canadian policy?

The traditional narratives surrounding the National Policy are unequivocal in their assessment of the role played by manufacturing interests' political influence in shifting government objectives towards protectionism. S.D. Clark (1939: 6-7), for example, writes, "...at a meeting in Toronto, the members of each manufacturing industry retired to a separate room and drafted a tariff covering their own articles. A similar scheme was adopted at a meeting of manufacturers in Montreal. The two groups then met in Ottawa and agreed upon a tariff which was submitted...to Sir Leonard Tilley (Macdonald's Minister of Finance) with the advice that it be adopted as it stood..." Orville McDiarmid (1946: 160-61) claims that "...in the closing months of the (1878 federal election) campaign, in response to Macdonald's invitation, manufacturers from all parts of the country participated in drafting the first National Policy tariff schedule..." Edward Porritt (1908: 317) describes the government response to this pressure, quoting a speech given by John A. Macdonald to a group of manufacturers in Hamilton, Ontario, in which he declared, "...let each manufacturer tell us what he wants and we will give him what he needs." Implicit in these narratives is the view that self-interested industrialists would not have been eager to expend resources in an effort to encourage the federal government to revise the Canadian tariff schedule, if they expected that the resulting policy change would be primarily directed towards revenue generation. Evidence that potential political influence played a role in the restructuring of the tariff schedule in 1879 can help to explain the inter- and intra-industry patterns we observe.

To explore the extent to which potential political influence had an impact on the selectivity in Canadian policy, we employ theory-consistent specifications based on Grossman and Helpman's (1994) protection-for-sale model, in which policy makers trade off competing policy goals when setting tariff rates. In a standard neo-classical environment, higher tariffs are associated with higher prices, lower quantities exchanged, and static, partial-equilibrium deadweight loss (DWL). DWL is a social welfare cost borne by domestic consumers – who are also potential voters – and it rises with higher trade elasticities and greater import penetration. On

the other hand, governments generate revenue from the taxation of import products, and domestic producers enjoy increased prices and increased domestic market power in the presence of more restrictive tariffs. Tariff revenues are negatively related to trade elasticities and positively related to import penetration, while trade restrictiveness is more stringent when higher tariffs are applied to more elastic import products with higher import penetration ratios (Kee, Nicita, and Olarreaga 2009). The central insight in the Grossman-Helpman model is that trade restrictiveness considerations are more likely to dominate revenue or DWL considerations if a product is produced by a domestic industry that has the potential to exert political influence over the government's tariff setting agenda. As this suggests, trade elasticities and import penetration can have differential effects on tariff changes, conditional on domestic producers' ability to exert political pressure.

Goldberg and Maggi (1999: 1139) derive an empirically tractable, theory-consistent estimating equation based on the Grossman-Helpman model that allows us to assess the role played by political influence in the setting of protectionist tariffs.[14] In their primary specification, which they use to explain cross-section differences in American non-tariff barriers in 1983, their left-hand-side dependent variable is the elasticity-weighted level of protection in a particular year, and they allow the impact of (inverse) import penetration to differ on the basis of domestic producers' potential political influence:

$$\frac{\tau_i \times e_i}{1 + \tau_i} = \gamma_0 + \gamma_1 \widetilde{m}_i^{-1} + \gamma_2 \left(Poldum_j \times \widetilde{m}_i^{-1} \right) + \nu_i \tag{2}$$

where: time subscripts are suppressed; i = import product; j = industry producing product i; e = trade elasticity (absolute value); $\widetilde{m}^{-1}$ = inverse import penetration ratio = (PQ_i/M_i); $Poldum_j$ = 1 if industry j is potentially politically influential, 0 otherwise. Goldberg and Maggi (1999: 1146–1147) (and Gawande and Bandyopadhyay 2000: 146) show that within the context of their econometric specifications, the theoretical predictions from Grossman and Helpman's model imply that γ_2 and $(\gamma_1 + \gamma_2)$ should both be positive. This implies that, for politically influential products, higher inverse import penetration – more domestic production relative to the value of imports – should be associated with higher elasticity-weighted levels of protection. The key structural parameter from the protection-for-sale model can also be recovered from (2) – the weight government assigns to potential political influence (as opposed to social welfare) in their objective function will be $\omega = \gamma_2/(1 + \gamma_1 + \gamma_2) \in [0, 1]$.

Goldberg and Maggi categorize products as potentially politically influential if the indus-

[14] A closely related empirical specification is employed in Gawande and Bandyopadhyay (2000), and a survey of the estimation of protection-for-sale models is provided in Gawande and Krishna (2008).

tries that produce them contributed $100,000,000 or more to political action committees (PAC) during the 1982 Congressional election cycle. With this indicator of *Poldum*, they find that in the United States in 1983, higher inverse import penetration ratios were associated with higher rates of protection if domestic producers were politically influential. However, if domestic producers did not have the potential to be politically influential, then higher inverse import ratios were associated with lower rates of protection. This key result is robust across specification choice, independent variable definitions, and the use of factor shares as exogenous instruments to account for potential endogeneity in their measures of import penetration and political influence. They suggest that this result is driven by the influence of large domestic producers (Goldberg and Maggi 1999: 1139): "...if domestic output is larger, specific-factor owners have more to gain from a (tariff-induced) increase in the domestic price..." Goldberg and Maggi's (1999: Table 1) estimate of the weight assigned to political influence in the US government's objective function in 1983 is between 0.014 and 0.019.[15]

Because Goldberg and Maggi's estimating equation is both simple and tractable, and because it has a well-defined structural interpretation, a slightly adapted version of (2) (with SIC2 industry fixed effects added to the right-hand-side) is our preferred protection-for-sale specification.[16] However, before presenting results from our estimation of (2), we provide some motivation for our theory-consistent estimates by employing a more descriptive, reduced form specification that links patterns reflected in the sector-level summary statistics reported in Table 4 to our measure of the potential political influence of Canadian producers during our period of study. In this reduced form estimating equation we use product-specific *changes* in AWT as the dependent variable, rather than the level of elasticity-weighted protection in any specific year; we interact both of the key protection-for-sale determinants – inverse import penetration and inverse trade elasticities – with indicators of potential political influence; and we include potential political influence as a separate, additive explanatory variable. Because we do not have annual, product-specific domestic gross output figures, we measure product-specific import penetration by dividing import values for the products listed in the 1871 *Trade and Navigation Tables* by products' gross output values enumerated in the digitized manuscripts of the 1871 *Canadian Census of Industrial Establishments*. We use Kee, Nicita, and Olarreaga's (2008) modern, disaggregated import demand elasticities as our measure of product-specific trade elasticity, and potential political influence is measured as a categorical variable that takes

[15]Gawande and Bandyopadhyay (2000: 147) point out that due to the non-linearity in the calculation of ω, the estimated weight on political influence depends on the scaling of the nominal values of imports and gross domestic production.

[16]Our inclusion of industry fixed effects in (2) is motivated in part by Gawande and Bandyopadhyay's (2000: 142-143) model, which calls for industry-specific controls for intermediate input production.

the value 1 for products produced by establishments that we determine to have been in the top quartile of potential political influence in 1871. Because we do not have access to the indicators of political influence or organization that are used in much of the modern political economy trade literature, we measure influence with an index that uses a principal components analysis to aggregate over a set of eight establishment characteristics, two location characteristics, and three indicators of political representation (see online appendix for details), all of which are drawn from the digitized manuscripts of the 1871 industrial census.[17] [18] We estimate our reduced form specification by ordinary least squares (OLS) with robust standard errors clustered by SIC2 industry and, in some specifications, province:

$$\Delta\tau_i = \alpha_0 + \alpha_1 c_i^{-1} + \alpha_2(Poldum_j \times c_i^{-1}) + \alpha_3 \widetilde{m}_i^{-1} + \alpha_4(Poldum_j \times \widetilde{m}_i^{-1}) + \alpha_5 Poldum_j + \theta_{jk} + \nu_i \tag{3}$$

where: time subscripts are suppressed; $\Delta\tau = \tau^t - \tau^{t-m}$; and θ_{jk} = SIC2 industry (and in some specifications province) fixed effects. The observations over which all of our protection-for-sale specifications are estimated include the 204 import products listed in the 1871 trade tables (identified at the HS4 level of aggregation). We use only those products listed in the 1871 tables because our import penetration ratios and political influence variables are derived from the complete count micro-data recorded in the manuscripts of the 1871 Canadian industrial census. The independent variables from 1871 reflect "initial conditions" that pre-date the move to protection under the National Policy by eight years, thereby easing potential simultaneity concerns.[19] Summary statistics for all of the variables used in our protection-for-sale

[17] In addition to Goldberg and Maggi's PAC contributions, Trefler (1993), for example, uses seller and buyer concentration ratios; minimum efficient scale; capital stock; unionization; unemployment; and labour tenure measures to capture political influence. Although many of our individual political influence variables are significantly correlated with observed tariff changes, we aggregate over all measures because no single determinant is obviously theoretically or empirically preferred, and almost all measures are closely collinear. Our indicators of potential political influence capture factors identified by Caves (1976), Helleiner (1977), and Saunders (1980) as key determinants of mid-twentieth-century Canadian tariff levels, and they are consistent with the late-nineteenth-century international trade policy determinants described by Lehmann (2010) and Lampe (2011).

[18] Potential political influence$_i$ = f(Industry and Establishment Characteristics$_j$, Location$_j$, Representation$_j$); where Industry and Establishment Characteristics$_j$ = g(Industry Output$_j$, Industry Employment$_j$, Number of Establishments$_j$, Average Labour Productivity$_j$, Average Profitability$_j$, Share Steam Power$_j$, Concentration Ratio$_j$, Intermediate Input Industry Size$_i$); Location$_j$ = m(Geographic Concentration$_{id}$ Population Density$_{id}$); Representation$_j$ = h(CMA Executive Committee Membership$_i$, Concentration in Toronto or Montreal$_{id}$, Concentration in Ontario or Quebec$_{ik}$); i = HS4 product; j = SIC2 industry producing product i; d = census districts producing 20% or more of product i; k = province with the largest number of establishments producing product i; and Intermediate Input Industry = industry with at least 20% of establishments listing product i as an intermediate input in 1871 industrial census).

[19] Chronologically separating our right-hand-side variables (based on evidence from 1871) from the move to protection (in 1879) does not necessarily purge any possibility of endogeneity, but remaining simultaneity concerns would have to be based on the notion that the import values and Canadian producers' employment, investment, location or output decisions from 1871 were significantly affected by tariff changes that were not introduced

specifications are provided in online appendix Table A2.

Insert Table 5

In Table 5 we report the parameter estimates (and robust standard errors, clustered by SIC2 industry) from our descriptive, reduced form equation (3) in columns (1a)-(1c). In column (1a) we see that there is no evidence of any significant correlation linking the change in Canadian product-specific AWT to product-specific import demand elasticities, import penetration ratios, or potential political influence, during the eight years (1870–1877) *prior* to the adoption of protectionist policy objectives under the National Policy. In column (1c) we see that during the period *after* the introduction of the National Policy (1880–1913), products with relatively high import demand elasticities and high import penetration ratios had larger changes in their AWT, but potential political influence is again inconsequential. In contrast, the correlations linking products' potential political influence to tariff changes introduced under the National Policy are large and strongly statistically significant (column 1b). On average, import products with closer domestically produced substitutes (higher import demand elasticities) and more domestic competition (higher inverse import penetration ratios) had disproportionately large increases in Canadian tariff rates imposed on them in 1879. However, these relationships are driven entirely by those products that were produced by politically influential establishments and industries. In other words, the National Policy's tariff increases were clearly targeting products with relatively high import demand elasticities and high levels of domestic production, but only if those products were politically influential. Even after controlling for the differential impact of import demand elasticity and import penetration on politically influential products relative to products without potential influence, a change in *Poldum* from 0 to 1 is associated with an additional 3.6 percentage-point increase in a product's tariff rate between 1877 and 1880, out of an average 7.2 percentage-point increase over all products.[20]

The estimates from our reduced form specification in columns (1a)-(1c) have no structural interpretation, but they do suggest that politically influential products were differentially targeted by Canadian tariff increases under the National Policy in 1879. In columns (2a)-(2d) we report the estimated parameters (and robust standard errors, clustered by SIC2 industry) from our theory-consistent protection-for-sale specification (2), with elasticity-weighted tariff levels

until 1879. McDiarmid (1946: 155) suggests to us that this is a plausible assumption, reporting that even Macdonald's Conservatives were not advocating tariff increases or a move away from revenue objectives until at least 1876. For equation (2) we employ an instrumental variable (IV) estimation approach as a check on this identification assumption (Table 5: Column 2c).

[20] The unconditional difference in AWT for politically influential products relative to products without influence is reported in Table 4.

in 1877, 1880 and 1900 as the dependent variables. This specification allows us to test, based on the structure of the Grossman-Helpman model, if protection was, in fact, for sale in Canada during the first era of globalization, and we can use the estimates to recover the key structural parameter from the theoretical model: ω = weight government assigns to potential political influence in their objective function. In column (2a) we see that in 1877 (the last full fiscal year before the introduction of the National Policy), higher product-specific inverse import penetration ratios were associated with lower elasticity-weighted tariff levels, but there is no significant differential effect for politically influential products. Our estimates suggest that in 1877, the weight the Canadian government placed on political influence was very low (0.035) and statistically indistinguishable from zero.[21] In 1900 (column 2d), twenty years after John A. Macdonald announced that protection would be the primary goal of Canadian trade policy, we again find that higher import penetration ratios are associated with higher elasticity-weighted tariff rates, but political influence again has no differential effect on this relationship, and the government's political influence weight has dropped to near zero (0.006).

In contrast to these results from the pre- and post-National Policy periods, and consistent with our reduced form estimates, potential political influence appears to have been a much more important determinant of Canadian elasticity-weighted protection in 1880, the first full fiscal year following the adoption of explicitly protectionist trade policy objectives. Identification in column (2b), which reports the OLS parameter estimates from our protection-for-sale equation for 1880, relies on the plausibility of our assumption that product-specific inverse import penetration and political influence, which are both measured with data from 1871, were unlikely to have been strongly affected by tariff levels set under the National Policy eight years later. From column (2b), just as we find for 1877 and 1900, products with higher inverse import penetration ratios are associated with lower levels of protection, but this result is now strongly overturned for politically influential products. As predicted in Grossman-Helpman's theoretical model, in Canada in 1880 politically influential products with strong domestic competition (high inverse import penetration) were differentially targeted for higher elasticity-weighted tariffs: $\gamma_2 > 0$ and $(\gamma_1 + \gamma_2) > 0$. In addition, the weight government placed on political influence in its objective function (ω), is now strongly statistically distinguishable from zero, and it has increased significantly relative to 1877 and 1900 ($widehat{\omega}_{1880} = 0.103$).

As a check on our assumption that chronologically separating our dependent and indepen-

[21] Our qualitative conclusions regarding the statistical significance and changes over time in ω are unaffected by the scale we use to measure nominal import or gross output values (Gawande and Bandyopadhyay 2000: 147). For the results reported in Table 5, nominal values are measured in thousands of Canadian dollars (CAD). If we measure nominal values in CAD, our OLS estimate of the weight government assigns to influence immediately following the introduction of the National Policy (ω_{1880}) falls from 0.103 to 0.018.

dent variables eases simultaneity concerns, in column (2c) we report results for 1880 derived under a very different identification strategy. Following Goldberg and Maggi (1999: 1144–1145), and Gawande and Bandyopadhyay (2000: 142-143), we employ a control function approach to instrument for contemporaneous import penetration and political influence in equation (2). More specifically, we use SIC2 industry-specific gross output indexes, calculated from Urquhart (1993: Table 4.1), to project forward our 1871 product-specific gross output figures. We then divide the interpolated annual output values by contemporaneous import product values to measure annual import penetration. In the first stage of our IV estimation we instrument for annual inverse import penetration ($\widetilde{m}_t^{-1}$) and potential political influence ($Poldum$) using product-specific factor shares calculated from the manuscripts of the 1871 industrial census.[22] As we expect, because we are now using interpolated, annual import penetration ratios, the IV point estimates reported in column (2c) differ from the OLS estimates reported in (2b), but our qualitative conclusions remain unchanged. Specifically, even when we instrument for contemporaneous import penetration and political influence, politically influential products with relatively high levels of domestic production appear to have enjoyed significantly higher tariff rates in 1880, and the importance government places on influence in its objective function increases significantly between 1877 and 1880 (from 0.050 to 0.242). In column (2c) we also report IV diagnostic test statistics for independent variable exogeneity, instrument strength, and instrument validity. We note that our Hausman test reveals some evidence of endogeneity when we use interpolated, contemporaneous import penetration ratios (but not when we use 1871 import penetration ratios), the partial F-statistics confirm the strength of the instruments in both first stage regressions, and Sargan's χ^2 over-identification test cannot reject the validity of our instruments at any standard level of significance. Both our OLS and IV estimates confirm the theoretical predictions from Grossman and Helpman's model – only after the National Policy was introduced in 1879 does protection appear to have been for sale in Canada, in the sense that politically influential products were being differentially targeted for protection.

Insert Figure 2

To illustrate the abruptness and uniqueness of the Canadian government's policy shift, in Figure 2 we depict annual estimates of the weight government places on political influence (as

[22] This approach closely mirrors Goldberg and Maggi's equations (4)-(8). Our instrument choice follows Goldberg and Maggi (1999: Tables A1 and A2), and Trefler (1993: Table 1). In some specifications we include a dummy variable in the first stage to account for four HS4 products (3003, 4105, 5112, 7409) with interpolated 1880 inverse import penetration ratios that are more than three standard deviations above the mean. Although this additional instrument improves instrument strength in the first stage $\widetilde{m}_{-1}$ equation, our qualitative conclusions are not dependent on its inclusion.

opposed to social welfare) in their policy setting objective function: $\omega_t = \gamma_{2t}/(1 + \gamma_{1t} + \gamma_{2t})$, where $t \in [1870, 1913]$, and γ_{1t} and γ_{2t} are derived from annual OLS estimates of our primary protection-for-sale specification (2), with industry fixed effects. Figure 2 also includes 95% confidence intervals, estimated with robust standard errors clustered by SIC2 industry. We can see that the weight on political influence first becomes statistically distinguishable from zero only in 1875, before peaking at approximately 0.10 under the National Policy in 1879, and remaining strongly statistically significant until 1894, after which $\widehat{\omega}$ falls sharply back towards zero, remaining there until the end of our period of study in 1913.[23] We note that the *Tariff Act of 1894*, introduced by John Thompson's Conservative government, reintroduced preferential access for import products originating within the British Empire, thereby taking a first step back from the National Policy's high, narrowly targeted tariff rates. The short-lived emphasis placed on political influence in Canadian tariff setting, starting in the late 1870s, illustrates another dimension to the sophisticated nature of Canada's policy response to the threats posed by US protectionism and rapidly integrating global markets. Under the National Policy, the largest tariff increases imposed by the Canadian government were applied to manufactured output products, but we find that within this group of products, increases were more dramatic for those products that had close domestic substitutes, substantial domestic competition, and politically connected domestic producers.

4.1 Robustness and Sensitivity Testing

In Appendix Table A1: Panels A and Panel B, the results from a series of robustness and sensitivity tests are reported. In Test (1) we employ Gawande and Bandyopadhyay's (2000) theory-consistent protection-for-sale specification, which moves trade elasticity (interacted with inverse import penetration) to the right-hand-side of Goldberg and Maggi's primary estimating equation. We report both OLS and IV parameter estimates, and the structural parameter $\widehat{\omega}$, which is equal to the weight government places on political influence *relative to* social welfare in the Gawande-Bandyopadhyay model. We again find that for products with potential political influence, inverse import penetration (now interacted with product-specific import demand elasticity) was positively correlated with Canadian tariff levels in 1880. This result continues to hold when we adopt our IV identification strategy, and our estimate of the weight government places on political influence relative to social welfare in 1880 now lies between 0.152 and 0.069. The structural interpretation of our findings, therefore, is unaffected

[23] We note that the potential political influence and import penetration variables in our specification reflect "initial conditions" from 1871. By the end of our sample period it is not obvious that these 35+-year-old conditions would still capture the economically or politically relevant pressures affecting trade policy.

by our use of either the Goldberg-Maggi or Gawande-Bandyopadhyay specifications. All the remaining tests reported in Appendix Table A1: Panels A and B illustrate the robustness of the conditional correlations we identify in Table 5: column (1b), using our reduced form specification (3).

Test (2) simply replicates the estimation of our reduced form specification for the National Policy period using an instrumental variables identification strategy in which interpolated contemporaneous import penetration and potential political influence are treated as potentially endogenous regressors. Product-specific factor shares drawn from the manuscripts of the 1871 industrial census are again used as excluded instruments in the first stage of our control function approach, and the second stage parameter estimates are reported in Panel A. We see that the IV estimates are very similar in sign, magnitude and significance to the OLS estimates, with just one exception – the parameter estimate on inverse import penetration in 1880, interacted with *Poldum* is now negative and statistically indistinguishable from zero. Based on a comparison of Table 5: columns (2b)-(2c) and Test (1), or Table 5: column (1b) and Test (2), we suggest that in general, our qualitative conclusions and the conditional correlations we identify do not depend on the identification strategy we adopt.

In Test (3) we replace the change in AWT under the National Policy with the change in products' effective rates of protection (ERP) and trade restrictiveness (TRI) (Kee, Nicita, and Olarreaga 2009, and Beaulieu and Cherniwchan 2014), as left-hand-side dependent variables. Similar to our results using the change in AWT, only for politically influential products do we find that changes in effective rates of protection or changes in TRI were positively related to import demand elasticities and domestic import competition. In addition, even after allowing for differential elasticity and import penetration relationships for politically influential products, we again find that increases in ERP and TRI are strongly positively correlated to potential political influence – increasing *Poldum* from 0 to 1 is associated with a 10.8 percentage-point increase in a product's effective rate of protection, and a 3.6 percentage-point increase in trade restrictiveness. The results from our primary specifications, and these two tests, indicate that products that had greater potential political influence not only experienced larger increases their tariffs in 1879, but they also experienced increased targeting of both relatively high output and high elasticity products.

In the next three tests (grouped together as Test 4) we use alternate measures of political influence. First, we disaggregate our *Poldum* categorical variable into three distinct dummy variables capturing industry characteristics, location characteristics, and political representation separately. Second, we use a *Polintensity* variable that measures the intensity of potential political influence relative to the maximum for each individual indicator (see online appendix

for details). This approach, which generates a compressed measure of the intensity of political influence that lies in the [0, 1] interval, reduces variation across products and makes the identification of our conditional correlations a little more difficult. And finally, we use a categorical variable that takes the value 1 only if a product is produced by an industry (identified at the HS4 level of aggregation) that has a representative on the executive committee of either the Ontario Manufacturers' Association (OMA) or the Manufacturers' Association of Montreal (MAM). Across all three of these alternate measures of influence, the signs and significance of the estimated relationships linking tariff changes to elasticity, import penetration, and political influence remain consistent with our primary specifications.

Turning to Panel B, in Test (5) we expand the time frame over which we measure tariff changes ($\tau_{1890} - \tau_{1877}$) to test whether our conclusions continue to hold if we include the tweaks and adjustments in the Canadian tariff schedule that were implemented during the decade following the introduction of the National Policy in 1879. The parameters are less precisely estimated when tariff changes from throughout the 1880s are included, but the key finding that potential political influence was strongly statistically significantly associated with larger tariff increases continues to hold. When we include the level of imports and the level of domestic production in 1871 as separate regressors, in place of import penetration ratios (Test 6), as expected, we find that for politically connected products, domestic production levels, rather than import values, were strongly associated with larger tariff increases in 1879. This is consistent with our earlier suggestion that the impact of high levels of domestic production dominate any impact that import levels have on the determination of a connection between import penetration and tariff changes. In Test (7) and (8) we confirm that our results are not dependent on the inclusion of SIC2 industry fixed effects, or the omission of province fixed effects.

Thirty-eight of the 204 HS4 products imported into Canada in 1871 were unmanufactured, forty-one of the 204 HS4 products were not produced domestically, and six fall into a category referred to as "exotics" – raw sugar, cocoa, diamonds, and apricots, for example. For all of these products, inverse import penetration ratios are often equal to zero, and our political influence indicators are set to zero by construction. Because these products are not "typical" for a variety of reasons, most notably because they were subject to consistently high tariff rates, which could only have been motivated by revenue objectives (Beaulieu and Cherniwchan 2014: 161–162), we may be concerned that they are disproportionately affecting our results. However, when we drop all unmanufactured products (Test 9), all exotics (Test 10), or all products with no Canadian production (Test 11), we find that our qualitative conclusions, particularly with respect to the importance of potential political influence, are unaffected. These atypical revenue generating products, therefore, may have been singled out for the very highest tariff

rates in the schedule, even under the National Policy, but any differences in their treatment were not sufficient to overturn the conditional correlations we identify that link domestic import competition, the degree of domestic substitutability, and political influence to Canadian tariff changes in 1879.

The results from our primary specifications, and our robustness and sensitivity tests, tell a consistent story – protection appears to have been for sale to politically influential producers under the National Policy, and as a result, import products with relatively close domestic substitutes and high levels of domestic production were differentially targeted.

5 Conclusion

The period between 1870 and 1913 is known as the first era of globalization. As a resource-rich, rapidly industrializing small open economy, Canada was significantly exposed to the pressures of international market integration and the protectionist tendencies of its fastest growing trade partner – the United States – during this period. The Canadian federal government under John A. Macdonald introduced the National Policy in 1879. One of the defining features of this policy was a revision of virtually every line of the Canadian tariff schedule, with the explicitly stated goal of protecting domestic infant industries from foreign competition. In this paper we use newly digitized annual product-specific information on import values and duties paid, which we have linked to micro-data on Canadian industrial establishments, to identify chronological and cross-section patterns in Canadian AWT and ERP.

We find that the shift in Canadian trade policy towards protectionism was more complex and sophisticated than is apparent from the traditional evidence on aggregate tariff levels. In 1879, Canadian tariff coverage increased and average tariff rates increased, but just as importantly, the selectivity of the tariff schedule also increased. The tariff changes we identify differentially targeted products both across and within industries, favouring manufactured final consumption goods. Using theory-consistent specifications based on "protection-for-sale" models, we document the extent to which product-specific differences in protection were related to differences in imports' penetration ratios, potential political influence, and import demand elasticity. We find that protection was for sale in Canada under the National Policy, and political influence played a key role in the selection of products subject to high tariff rates.

Our results allow us to document the highly selective and targeted nature of Canada's response to globalization after 1870 in a way that is only possible with annual, linked granular evidence from the Canadian trade tables and industrial censuses. Canada's adoption of protectionism was not uniformly applied across products, and the recognition of this fact opens the

door to a reexamination of long-standing debates that have dominated the historiography on trade policy and international economic development during this era.

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Table 1: Average Weighted Tariffs (AWT)

	1870	1880	1890	1900	1913	1870–1913
All Products	0.141	0.208	0.215	0.168	0.176	0.174
Unmanufactured	0.147	0.189	0.155	0.077	0.071	0.884
Manufactured	0.137	0.213	0.233	0.197	0.196	0.199
Food	0.241	0.306	0.384	0.429	0.352	0.356
Tobacco	0.542	0.602	1.006	1.137	0.856	0.881
Rubber	.	0.251	0.304	0.207	0.228	0.218
Leather	0.122	0.180	0.172	0.179	0.203	0.179
Textile	0.124	0.226	0.230	0.198	0.168	0.199
Clothing	0.146	0.246	0.300	0.263	0.288	0.259
Wood	0.047	0.133	0.109	0.073	0.084	0.081
Paper	0.150	0.239	0.339	0.271	0.268	0.263
Printing	0.059	0.162	0.184	0.116	0.131	0.133
Iron	0.101	0.132	0.193	0.138	0.181	0.166
Transport	0.041	0.244	0.297	0.279	0.310	0.243
Non-Ferrous	0.088	0.167	0.117	0.089	0.098	0.101
Non-Metallic	0.139	0.231	0.256	0.219	0.207	0.223
Petroleum	0.113	0.172	0.139	0.129	0.110	0.124
Chemical	0.086	0.136	0.174	0.112	0.099	0.117
Miscellaneous	0.106	0.247	0.239	0.219	0.229	0.224

Source: Dominion of Canada, Sessional Papers, *Trade and Navigation Tables*.
Notes: National Policy spans 1878 and 1879 fiscal years. Unmanufactured products include raw materials and unprocessed foodstuffs. 1870–1913 = weighted annual average. Electrical apparatus dropped due to a lack of observations. AWT = total duty paid / value imports for home consumption (implied import value weights).

Table 2: Tariff Coverage and Dispersion across Products

	Panel A: Coverage					Panel B: Mean Absolute Deviation (ΔAWT)				
	1870	1880	1890	1913	1870–1913	1870	1879	1890	1913	1870–1913
All Products	0.608	0.755	0.755	0.730	0.719	0.019	0.050	0.024	0.014	0.019
Unmanufactured	0.490	0.480	0.518	0.500	0.476	0.021	0.047	0.025	0.015	0.013
Manufactured	0.640	0.829	0.809	0.777	0.775	0.019	0.050	0.024	0.014	0.020
Food	0.857	0.845	0.968	0.971	0.924	0.058	0.072	0.050	0.027	0.048
Tobacco	1.000	1.000	1.000	1.000	1.000	0.029	0.039	0.085	0.134	0.073
Rubber	.	1.000	0.857	0.778	0.832	.	0.006	0.005	0.003	0.011
Leather	0.714	0.824	0.750	0.750	0.767	0.000	0.025	0.011	0.004	0.009
Textile	0.583	0.825	0.807	0.805	0.798	0.025	0.038	0.010	0.005	0.009
Clothing	0.833	1.000	0.946	0.949	0.945	0.000	0.052	0.022	0.006	0.014
Wood	0.250	0.571	0.606	0.600	0.531	0.004	0.024	0.006	0.002	0.007
Paper	1.000	0.929	0.895	0.731	0.842	0.000	0.023	0.057	0.011	0.015
Printing	0.833	0.833	0.750	0.727	0.736	0.002	0.045	0.004	0.001	0.008
Iron	0.542	0.907	0.857	0.894	0.860	0.001	0.048	0.025	0.008	0.016
Transport	0.500	1.000	1.000	0.905	0.950	0.001	0.053	0.004	0.007	0.014
Non-Ferrous	0.364	0.903	0.696	0.537	0.600	0.000	0.048	0.014	0.004	0.009
Non-Metallic	0.600	0.967	0.943	0.867	0.893	0.000	0.040	0.024	0.011	0.012
Petroleum	0.800	1.000	0.889	0.636	0.698	0.024	0.040	0.020	0.006	0.033
Chemical	0.556	0.645	0.607	0.565	0.564	0.012	0.039	0.033	0.031	0.027
Miscellaneous	0.650	0.795	0.851	0.769	0.792	0.000	0.036	0.019	0.004	0.012

Notes: See notes from Table 1. Coverage = # products with $AWT > 0 \div$ total # products; $MAD = \frac{\Sigma_i \ \Delta AWT_i - \mu}{N}$.

Table 3: Effective Rates of Protection (ERP)

	1870	1880	1890	1900	1913	1870–1913
Manufactured	0.216	0.365	0.373	0.358	0.340	0.338
Food	1.113	1.011	1.152	1.823	1.455	1.350
Tobacco	1.173	1.373	1.922	2.193	1.715	1.729
Rubber	-0.200	0.717	1.098	0.581	0.494	0.584
Leather	0.254	0.481	0.386	0.456	0.533	0.425
Textile	0.081	0.520	0.522	0.433	0.402	0.449
Clothing	0.374	0.271	0.282	0.289	0.358	0.292
Wood	0.039	0.303	0.244	0.174	0.182	0.203
Paper	0.328	0.266	0.442	0.313	0.337	0.324
Printing	0.000	0.121	0.146	0.070	0.086	0.090
Iron	0.112	0.193	0.251	0.223	0.305	0.237
Transport	0.035	0.401	0.443	0.560	0.624	0.427
Non-Ferrous	0.159	0.212	0.222	0.175	0.214	0.189
Non-Metallic	0.178	0.315	0.320	0.262	0.273	0.286
Petroleum	0.020	-0.151	-1.067	-0.848	0.219	-0.498
Chemical	0.264	0.364	0.435	0.277	0.215	0.305
Miscellaneous	0.234	0.318	0.321	0.205	0.265	0.276

Notes: See notes from Table 1 and Appendix Table A2, and text for discussion of intermediate input identification. $ERP = \frac{AWT^{out} - s^{in} AWT^{in}}{1 - s^{in}}$.

Table 4: Targeted Protection

	1870–77	Δ 1878/79	1880–89	1890–99	1900–13
AWT_{Manu}	0.133	+0.072	0.223	0.228	0.200
$Coverage_{Manu}$	0.660	+0.092	0.812	0.786	0.769
$Share\ \Delta AWT_{Manu} > 0$	0.638	+0.337	0.532	0.452	0.467
$Relative\ MAD_{\Delta AWT_{Manu}}$	0.134	+0.167	0.079	0.112	0.094
$AWT_{Manu} - AWT_{RawMat}$	0.077	+0.026	0.091	0.102	0.104
$AWT_{Manu} - AWT_{Exotic}$	-0.195	+0.064	-0.092	-0.149	-0.258
ERP_{Manu}	0.224	+0.120	0.364	0.376	0.352
$AWT_{Poldum=1} - AWT_{Poldum=0}$	0.126	+0.034	0.168	0.203	0.164
$\widehat{\omega}$	0.002	+0.068	0.069	0.028	0.003

Notes: See notes from Tables 1, 2, 3, and 5. *Share* $\Delta AWT > 0 = \forall$ products with $AWT_{t-1} > 0$, # products with $\Delta AWT > 0 \div$ total # products; *Relative* $MAD = \frac{\Sigma_n |\Delta AWT_n - \mu|}{N \times AWT}$; $\widehat{\omega}$ = weight on potential political influence in government's objective function (Goldberg and Maggi 1999).

Table 5: Impact of Political Influence (Protection for Sale)

	Reduced Form			Goldberg-Maggi (1999)			
	(1a)	(1b)	(1c)	(2a)	(2b)	(2c)	(2d)
	ΔAWT_{PreNP}	ΔAWT_{NP}	ΔAWT_{PostNP}	AWT_{1877}	AWT_{1880} *(OLS)*	AWT_{1880} *(IV)*	AWT_{1900}
ϵ^{-1}	0.004	0.003	-0.014***				
	(0.004)	(0.003)	(0.003)				
$Poldum \times \epsilon^{-1}$	-0.009	-0.011**	-0.021				
	(0.006)	(0.005)	(0.013)				
$\widetilde{m}^{-1}$	-0.123	-0.016	-0.001***	-0.050**	-0.006***	-0.159*	-0.012***
	(0.154)	(0.011)	(0.0001)	(0.023)	(0.0002)	(0.093)	(0.0002)
$Poldum \times \widetilde{m}^{-1}$	0.130	0.098***	-0.131	0.034	0.114***	0.347**	0.006
	(0.153)	(0.026)	(0.035)	(0.024)	(0.020)	(0.146)	(0.016)
$Poldum$	0.004	0.036***	0.004				
	(0.012)	(0.012)	(0.045)				
$\gamma_1 + \gamma_2$				-0.016	0.109***	0.188*	-0.006
				(0.010)	(0.020)	(0.108)	(0.016)
$\widehat{\omega}$				0.035	0.103***	0.292***	0.006
				(0.024)	(0.016)	(0.104)	(0.016)
$\widehat{\omega}_{1880} - \widehat{\omega}_{1877}$					0.068*	0.242**	
					(0.037)	(0.118)	
H_0 : *Exog. Regressors*					1.980	5.040*	
					(0.372)	(0.080)	
H_0 : *Weak Instruments*: $\widetilde{m}^{-1}$						17.37***	
						(0.000)	
$Poldum$						7.85***	
						(0.001)	
H_0 : *Valid Instruments*						3.627	
						(0.163)	
SIC2 Industry FE	✓	✓	✓	✓	✓	✓	✓
N	188	177	182	192	183	183	196
R^2	0.004	0.030	0.052	0.001	0.005	0.010	0.015

Notes: See text for definitions and specifications. Dependent variables: Column (1a) = $(\tau_{1877} - \tau_{1870})$; Column (1b) = $(\tau_{1880} - \tau_{1877})$; Column (1c) = $(\tau_{1913} - \tau_{1880})$; Column (2a), (2b), (2c), (2d) = $(\tau_t \times \epsilon)/(1 + \tau_t)$. Political influence ($Poldum$) = categorical variable equal to 1 for products with 1871 potential political influence in the top quartile (see text and appendix for details). Robust standard errors clustered by industry reported in parentheses (unless otherwise noted). Industry fixed effects defined at SIC2 level (Food and Beverages omitted). Columns (2a)–(2d) report $H_0 : \gamma_1 + \gamma_2 = 0$, where γ_1 and γ_2 are parameters associated with $\widetilde{m}^{-1}$ and $(Poldum \times \widetilde{m}^{-1})$, respectively; and $H_0 : \widehat{\omega} = 0$, where $\widehat{\omega}$ = weight assigned to political influence in the government's objective function (Goldberg and Maggi 1999: 1138). Column (2c) reports second-stage IV-estimates treating $Poldum$ and $\widetilde{m}^{-1}_{1880}$ as potentially endogenous regressors (1871 factor shares used as excluded instruments). Columns (2b) and (2c) report $H_0 : \widehat{\omega}_{1880} - \widehat{\omega}_{1877} = 0$; and Hausman joint exogeneity test for $Poldum$ and $\widetilde{m}^{-1}$. Column (2c) reports weak instrument partial F-statistics from first stage regressions; and Sargan over-identification test for instrument validity. P-values reported in parentheses for all IV-diagnostic tests. *, **, *** indicate statistical significance at 90%, 95%, 99% level of confidence.

Appendix Table A1: Protection for Sale Robustness Tests

	Panel A							
	(Test 1) Gawande and Bandyopadhyay (2000)		(Test 2) Reduced Form	(Test 3) Alt. Protection		(Test 4) Alt. Political Influence		
	AWT_{1880} *(OLS)*	AWT_{1880} *(IV)*	*IV*	ΔERP_{NP}	ΔTRI_{NP}	*Disaggregate*	*Intensity*	*CMA Exec.*
$(\widetilde{m} \times \epsilon)^{-1}$	-0.004***	-0.027*						
	(0.0001)	(0.016)						
$Poldum \times (\widetilde{m} \times \epsilon)^{-1}$	0.151***	0.067***						
	(0.054)	(0.025)						
$\widehat{\omega}$	0.152***	0.069***						
	(0.054)	(0.026)						
ϵ^{-1}			0.002	0.004	0.003	0.004	0.004	0.002
			(0.003)	(0.008)	(0.003)	(0.003)	(0.003)	(0.002)
$Poldum \times \epsilon^{-1}$			-0.013***	-0.094***	-0.011**	-0.015*	-0.011**	-0.024
			(0.004)	(0.009)	(0.005)	(0.008)	(0.004)	(0.020)
$\widetilde{m}^{-1}$			-0.028**	-0.094***	-0.016	-0.025*	-0.031**	-0.020**
			(0.012)	(0.034)	(0.011)	(0.014)	(0.014)	(0.010)
$Poldum \times \widetilde{m}^{-1}$			-0.036	0.226**	0.098***	0.099***	0.108***	0.094***
			(0.060)	(0.092)	(0.026)	(0.030)	(0.031)	(0.036)
$Poldum$			0.064***	0.108***	0.036***			
			(0.023)	(0.036)	(0.012)			
$Inddum$						0.029*		
						(0.015)		
$Repdum$						0.011		
						(0.020)		
$Locdum$						0.025**		
						(0.012)		
$Polintensity$							0.168***	
							(0.048)	
CMA Executive								0.039*
								(0.023)
SIC2 Industry FE	✓	✓	✓	✓	✓	✓	✓	✓
N	183	183	177	103	177	177	177	179
R^2	0.036	0.020	0.048	0.128	0.030	0.050	0.051	0.022

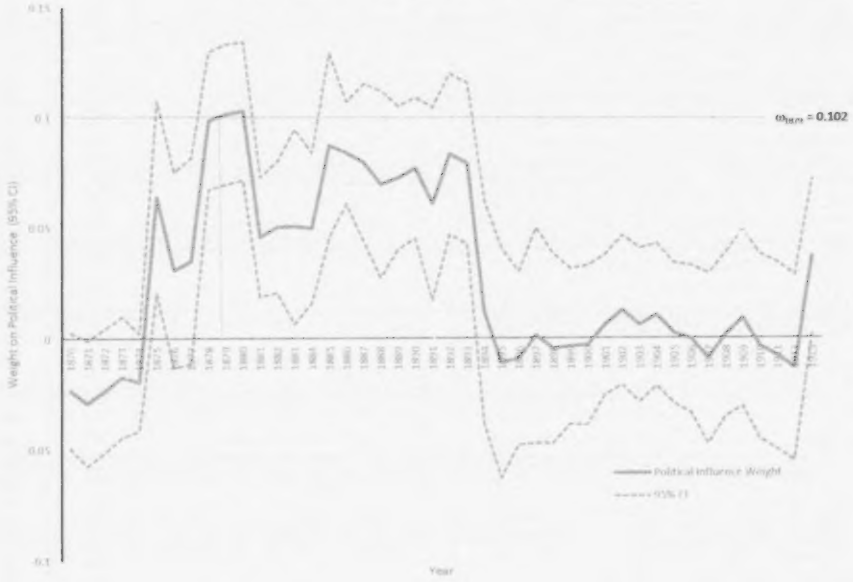
Notes: See notes from Table 5, and text for definitions and specifications. Test (1): Gawande and Bandyopadhyay (2000), with elasticity interacted with import penetration on RHS; IV estimates use factor shares as excluded instruments; $\widehat{\omega}$ = government's weight on political influence relative to social welfare. Tests (2)–(11) based on reduced form specification (3). Test (2): second-stage IV-estimates of reduced form specification, treating $Poldum$ and $\widetilde{m}^{-1}$ as potentially endogenous regressors. Test (3): alternate measures of protection include changes in the effective rate of protection, and trade restrictiveness between 1877–1880. Test (4): alternate measures of political influence include political influence disaggregated into fixed effects for industry characteristics, location characteristics, and political representation; intensity of potential political influence; and representation on the OMA or MAM executive committees.

	Panel B						
	(Test 5) $\Delta\tau_{1890-1877}$	(Test 6) Separate M and PQ	(Test 7) Drop SIC FE	(Test 8) Province FE	(Test 9) Only Manu.	(Test 10) Drop Exotics	(Test 11) Drop $PQ = 0$
ϵ^{-1}	-0.003	0.003	0.003	0.003	0.005***	0.003	0.002
	(0.004)	(0.003)	(0.003)	(0.006)	(0.001)	(0.003)	(0.004)
$Poldum \times \epsilon^{-1}$	-0.013	-0.013*	-0.015***	-0.011	-0.014***	-0.011**	-0.010*
	(0.014)	(0.007)	(0.005)	(0.006)	(0.005)	(0.005)	(0.006)
$\widetilde{m}^{-1}$	0.030*		-0.037***	-0.023	-0.017	-0.016	-0.008
	(0.016)		(0.011)	(0.018)	(0.011)	(0.011)	(0.011)
$Poldum \times \widetilde{m}^{-1}$	0.016		0.097***	0.099***	0.100***	0.098***	0.071**
	(0.026)		(0.025)	(0.020)	(0.026)	(0.025)	(0.028)
M		-2.272					
		(2.754)					
$Poldum \times M$		12.239					
		(13.177)					
PQ		-1.240					
		(0.951)					
$Poldum \times PQ$		1.950***					
		(0.550)					
$Poldum$	0.088***	0.039**	0.028*	0.032***	0.038***	0.035***	0.049**
	(0.032)	(0.018)	(0.014)	(0.002)	(0.013)	(0.014)	(0.021)
SIC2 Industry FE	✓	✓		✓	✓	✓	✓
Province FE				✓			
N	186	177	177	176	140	171	138
R^2	0.042	0.023	0.023	0.025	0.037	0.029	0.048

Notes: See notes from Table 5 and Panel A, and text for definitions and specifications. Test (5): extends the adoption period for protectionism to 1890. Test (6): separates import penetration into import values and domestic production. Test (7): drops industry fixed effects. Text (8) includes province and industry fixed effects with two-way clustered standard errors. Test (9): drops unmanufactured products. Test (10): drops "exotics" (Beaulieu and Cherniwchan 2014: 162). Test (11): drops products with no domestic production. Results from other robustness tests and all IV diagnostics are available upon request from the authors.

Figure 1: Canadian Trade Policy, 1870–1913

Figure 2: Political Influence Weight in Government Objective Function



Online Appendix

Measuring Potential Political Influence (*Poldum*)

The establishment characteristics we incorporate into our political influence measures reflect the notion that larger, more concentrated industries that were made up of larger, more profitable, productive and technologically advanced establishments in 1871 had the potential to exert greater political influence over Canada's tariff setting agenda in 1879 (Trefler 1993).[24] The location characteristics included in our influence variables capture the political importance of industries located in districts that were more densely populated with potential voters in 1871, industries with establishments geographically dispersed across the country, and industries that were locally important because their production was so densely concentrated in particular districts.[25] Because Porritt (1908), Clark (1939), and McDiarmid (1946) all attach particular importance to the political access enjoyed by the Canadian Manufacturers' Association (CMA) – comprising the Ontario Manufacturers' Association (OMA) and the Manufacturers' Association of Montreal (MAM) – in the process of rewriting the Canadian tariff schedule in 1879, we select indicators of political representation based on our belief that products produced by manufacturing industries with production concentrated in Toronto or Montreal in 1871, and/or with a representative among the leadership of the Ontario or Montreal manufacturers' association, had greater potential political representation when the National Policy was being formulated.[26]

Because many of these indicators of potential political influence are strongly correlated across products, we employ three aggregation techniques to derive the political influence variables used in our specifications. First, we use all of our influence indicators to calculate the

[24]Establishment characteristics include: the number of establishments producing each HS4 product recorded in the 1871 census manuscripts; total employment in these establishments; gross output per establishment; average labour productivity; average profit shares (where profit is defined as value added less wages and salaries paid); proportion of establishments using steam power; output concentration ratios (gross output of largest 1% of establishments / aggregate gross output); and total employment in all establishments using each HS4 product as an intermediate input. Because we expect intermediate input using industries to exert political influence to suppress tariff increases, the size of the input using industries enters negatively.

[25]Location characteristics include: an urban dummy that takes the value 1 if the census districts housing establishments that produced the most gross output in 1871 (at least 20% of aggregate domestic production) had population densities in excess of 15 people per acre; the share of census districts with at least one establishment; and the share of aggregate gross output over all districts produced in the districts with the most gross output. Other county-level location characteristics that are included in robustness checks include: Conservative vote shares in the 1878 federal election; industrial employment shares and foreign born shares; and union activity.

[26]Representation characteristics include dummy variables that take the value 1 for the HS4 products that: were produced by establishments that had a representative on the executive committees of the Ontario Manufacturers' Association or the Manufacturers' Association of Montreal during the late 1870s; goods with at least 20% of their gross output produced in establishments located in Toronto or Montreal in 1871; and goods with a majority of their gross output produced in establishments located in Ontario or Quebec in 1871.

first principal component for each of the 204 HS4 products identified in the 1871 *Trade and Navigation Tables*. We then generate a categorical variable ($Poldum$) that takes the value 1 if a product's first principal component lies in the top quartile, 0 otherwise. With our second approach, we generate dummy variables that take the value 1 if a product's indicator exceeds the median, 0 otherwise. An index is then calculated by summing the dummy variables for all indicators – $Polindex \in [0, 15]$ – and the aggregate political influence categorical variable takes the value 1 if a product's $Polindex$ lies in the top quartile, 0 otherwise. The first two aggregation techniques generate closely correlated $Poldum$ measures, and very high rank correlations across the SIC2 manufacturing industries with the highest $Poldum$ averages, which reflect the proportion of products produced by an industry that can be said to have been potentially politically influential. The most influential industries using these measures include Tobacco, Petroleum, and Iron and Steel (see Appendix Table A2). Some of the lowest $Poldum$ industries include Textiles, Non-Metallic Mineral Products, and Miscellaneous Products. Our final aggregation approach moves away from a blunt $[0, 1]$ categorization, seeking to reflect the intensity of potential influence. For each of the 204 HS4 products identified in the 1871 trade tables, and for each of the establishment, location and representation indicators, we measure the value of each indicator relative to the maximum over all products. We then take an unweighted average across all 15 ratios, thereby measuring the average intensity of each product's potential political influence relative to the "most influential" product ($Polintensity \in [0, 1]$).[27]

[27] The 59 products that were imported into Canada in 1871 but not produced in Canada, including many of the products classified as "exotics", are assumed to have no political influence ($Poldum$ and $Polintensity$ are set equal to 0 if domestic production is equal to 0).

Online Appendix Table A1: Intermediate Inputs Used in *ERP* Calculations

	Manufacturing Industries' Intermediate Inputs (1871)		
	HS4 Code	Description	Frequency
Food	1001	Wheat and Meslin	0.483
	1004	Oats	0.362
	1003	Barley	0.362
	1008	Buckwheat	0.327
	1005	Maize (Corn) Seed	0.318
	1002	Rye	0.305
	1101	Wheat or Meslin Flour	0.214
	1102	Cereal Flours	0.209
Tobacco	2401	Tobacco, Raw	1.000
Rubber	4001	Natural Rubber	1.000
Leather	4107	Leather (After Tanning)	0.717
	4103	Raw Hides and Skins	0.242
Textiles	5106	Yarn of Carded Wool	0.734
	5107	Yarn of Combed Wool	0.734
	5108	Yarn of Animal Hair	0.734
	5109	Yarn of Wool	0.734
	5110	Yarn of Coarse Animal Hair	0.728
	5205	Cotton Yarn (>85% Uncombed)	0.666
	5206	Cotton Yarn (<85% Uncombed)	0.666
	5207	Cotton Yarn	0.666
	5201	Raw Cotton	0.201
Clothing	5208	Woven Fabrics of Cotton (>85% <200g/m2)	0.867
	5209	Woven Fabrics of Cotton (>85% >200g/m2)	0.867
	5210	Woven Fabrics of Cotton (<85% <200g/m2)	0.867
	5211	Woven Fabrics of Cotton (<85% >200g/m2)	0.867
	5212	Other Woven Fabrics of Cotton	0.867
Wood	4403	Wood in the Rough	0.872
Paper	4801	Newsprint	0.513
	4802	Paper, Uncoated (Writing)	0.513
	4804	Paper, Uncoated (Kraft)	0.513
	1213	Cereal Straw, Husks, Fibers	0.385
Printing	4804	Paper, Uncoated (Kraft)	0.949
	4801	Newsprint	0.933
	4802	Paper, Uncoated (Writing)	0.929
	3215	Ink	0.577
Iron	7201	Pig Iron	0.728
	4403	Wood in the Rough	0.431
Transport	4403	Wood in the Rough	0.827
	7201	Pig Iron	0.432
Non-Ferrous	8004	Tin Plates, Sheets, Strips (>0.2 mm)	0.510
	8001	Unwrought Tin	0.402
	7409	Copper Plates, Sheets, Strips (>0.15 mm)	0.280
	7905	Zinc Plates, Sheets, Strips, Foil	0.201
Non-Metallic	2521	Limestone	0.518
	2508	Clays	0.273
Petroleum	2709	Petroleum Oils, Crude	0.833
	2710	Petroleum Oils, Refined	0.333
Chemical	2620	Slag, Ash, Residues	0.677
Miscellaneous	7106	Silver	0.298
	7108	Gold	0.287
	7107	Silver Clad Metals	0.279
	7109	Gold Clad Metals	0.279
	7111	Platinum Clad Metals	0.274

Notes: HS4 products reported as intermediate inputs by at least 20% of industrial establishments in each SIC2 industry are used in *ERP* calculations. Frequency = establishments reporting given intermediate input / total establishments in each industry.

Online Appendix Table A2: Protection-for-Sale Summary Statistics

	No. HS4	ΔAWT	ϵ	m	*Poldum*	*Polintensity*
All Products	204	0.050	-1.885	0.358	0.186	0.200
Unmanufactured	42	0.041	-2.346	0.396	0.048	0.069
Manufactured	162	0.052	-1.765	0.348	0.222	0.235
Food	28	0.011	-1.318	0.239	0.214	0.221
Tobacco	2	0.002	-1.166	0.000	1.000	0.348
Rubber	0	.	.	.	.	.
Leather	6	0.059	-1.620	0.335	0.333	0.291
Textile	12	0.058	-1.950	0.337	0.000	0.217
Clothing	6	0.069	-1.541	0.245	0.167	0.193
Wood	11	0.028	-1.136	0.455	0.182	0.272
Paper	3	0.079	-0.749	0.334	0.333	0.313
Printing	5	0.025	-3.084	0.600	0.200	0.161
Iron	21	0.072	-2.489	0.286	0.381	0.267
Transport	3	0.149	-2.817	0.000	0.333	0.297
Non-Ferrous	10	0.096	-1.092	0.500	0.300	0.243
Non-Metallic	9	0.062	-1.775	0.435	0.000	0.187
Petroleum	3	0.093	-1.002	0.333	0.667	0.237
Chemical	29	0.047	-2.154	0.416	0.172	0.224
Miscellaneous	14	0.058	-1.510	0.371	0.143	0.217

Notes: No. HS4 = number of import products listed in 1871 *Trade and Navigation Tables* (at the HS4 level of aggregation). $\Delta AWT = (\tau_{1880} - \tau_{1877})$, averaged over HS4 import products. ϵ = Kee, Nicita, and Olarreaga (2008) import demand elasticities (aggregated up to HS4). m = average import penetration ratio in 1871. *Poldum* = political influence categorical variable = 1 for products with 1871 potential political influence in top quartile, 0 otherwise (see text and appendix). *Polintensity* = 1871 political influence relative to maximum over all products (see text and appendix).